NOMADSS Data Management Support from EOL

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SOAS/NOMADSS Science Coordination Meeting
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EOL Data Management Philosophy

- **Early involvement in project planning**
- **Involvement with PIs to develop data management strategy (e.g., plan, policy, format, special collection and processing)**
- **Consistent implementation of data management strategy for lifetime of project and beyond (data Stewardship)**
- **Reliable, safe and efficient long-term archive and distribution system**
- **Easy and efficient access to datasets by broader community including educators and students**

DC3 Data Management Web Site at NCAR/EOL

What's New?

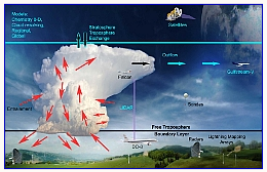
DC3 Science Team Meeting (Feb. 25-28, 2013 in Boulder, CO) Information

Aircraft Data Submission to NASA/LaRC server available 10AM EST 7 Jan 2013.
National Weather Service High Resolution Radiosonde Data Set
NEXRAD Radar with GV and DC8 Flight Track Movies
DC3 Data Policy - *Final*

Project Description

The Deep Convective Clouds and Chemistry Project (DC3) field campaign investigated the impact of deep, midlatitude continental convective clouds, including their dynamical, physical, and lightning processes, on upper tropospheric (UT) composition and chemistry.

The DC3 field campaign made use of extensively instrumented aircraft platforms and ground-based observations. The NSF/NCAR Gulfstream-V (GV) aircraft was the primary platform to study the high altitude outflow of the storms, and was instrumented to measure a variety of gas-phase species, radiation, and cloud particle characteristics. In addition, the DLR Falcon 20 supported the GV with measurements of trace species in the fresh anvil outflow.



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The GV and Falcon were also documenting the downwind chemical evolution of the convective plume. The NASA DC-8 aircraft complemented the GV and Falcon with in situ observations to characterize the convective storm inflow and provided remote sensing to aid in flight planning and column characterization. Ground-based radar networks were used to depict the physical and kinematic characteristics of the storm and provided input to the aircraft operations. The impact of lightning on outflow composition was constrained through detailed measurements from lightning mapping arrays. The forecasting and analysis was improved through other observations such as radiosondes.

The observations were conducted in three locations: 1) northeastern Colorado, 2) west Texas to central Oklahoma, and 3) northern Alabama in order to gather data on different types of storms and with different boundary layer compositions as well as to ensure sampling of convection during the time period of the field campaign. The types of storms sampled were air mass, multicell, and supercell

Data Access

DC3 Data Archive *(under development)*

Dataset Documentation Guidelines
Data Submission Instructions
DC3 Data Policy - *Final*

Aircraft Only: Data Policy, Documentation Guidelines & Submission Instructions- *Final*
NSF/NCAR GV Documentation Summary

DC3 2012 Field Catalog
DC3 2011 Field Catalog - Dry Run

Publications

DC3 Publications

Documents

DC3 Operations Plan - Updated 28 April 2012

DC3 Scientific Project Overview
DC3 Experiment Design Overview
NCAR Risk Assessment for DC3
AEROS Documentation
AEROS Configuration File

(Click for Full Resolution)

Meetings

DC3 Meetings

ReadyTalk "how to" Instructions

Participants and Mailing Lists

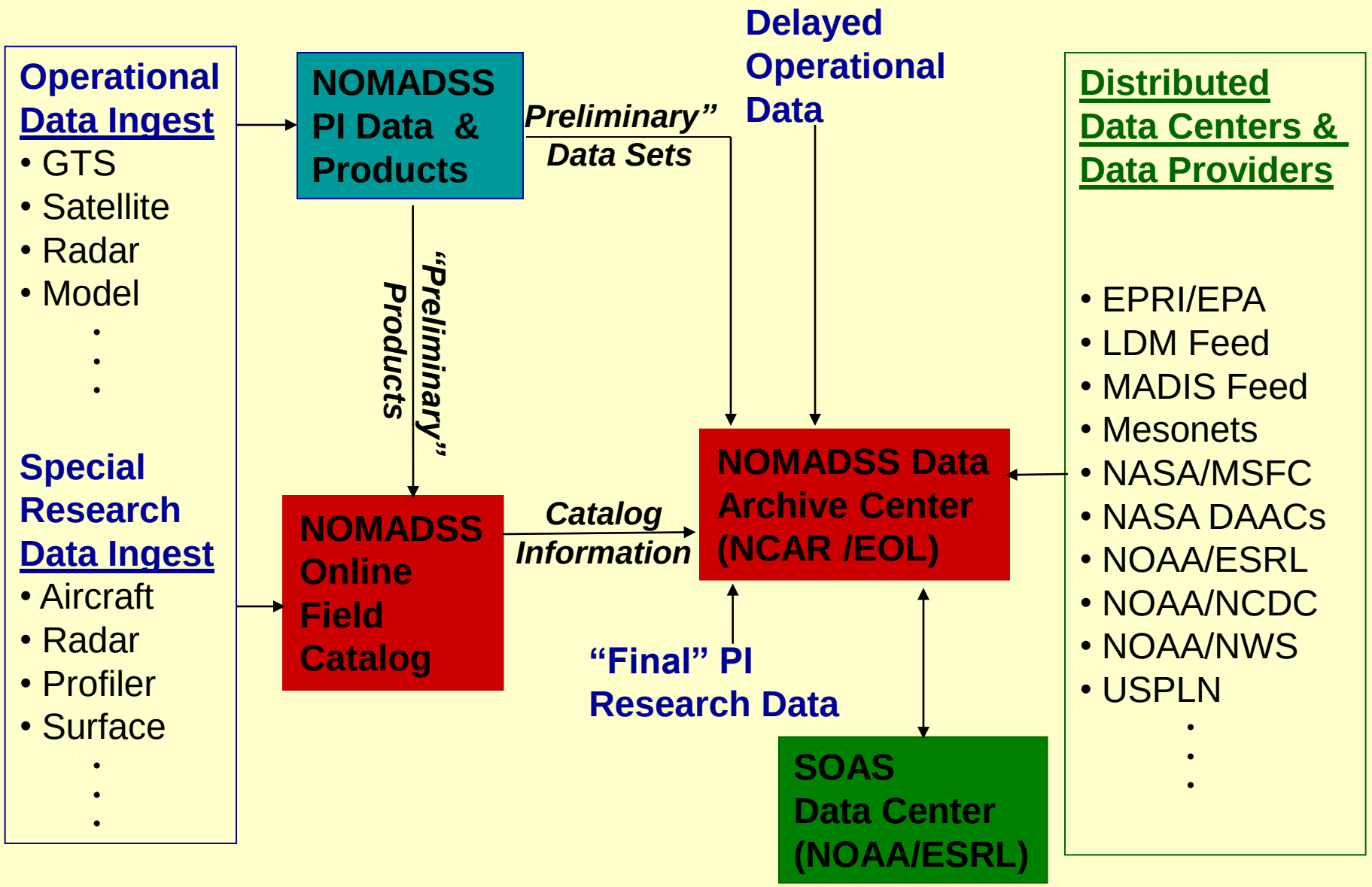
- Project Description
- Data Access & Field Catalog
- Publications
- Documentation
- Meetings and Presentations
- Mailing Lists
- Education and Outreach
- Related Web Pages
- PI and Contact Information

http://www.eol.ucar.edu/projects/dc3/

NOMADSS DATA POLICY SUMMARY (*Proposed*)

- **All investigators must agree to promptly submit their processed "preliminary" data to the NOMADSS archive no later than 15 January 2014 (6 months following field phase)**
- **All "preliminary" data shall be provided to other NOMADSS Investigators upon request (restricted as appropriate)**
- **During the initial 1-year data analysis period, data may be provided to a third party only with the permission of the investigator(s) who collected the data**
- **All data will be considered public domain not more than one year following the end of the NOMADSS data submission deadline (15 January 2015)**
- **Any use of the data will, at a minimum, include acknowledgment. Co-authorship TBD with the investigator(s) who collected the data**

Expected NOMADSS Data Flow



Anticipated NOMADSS Datasets

- C-130 state parameters and standard instrumentation (dynamical, microphysical, etc)
- C-130 PI instrumentation data
- Regional high resolution radar composites
- Regional Radar/satellite/lightning composites
- Multiple aircraft flight tracks
- Research and operational soundings
- Surface meteorological data, mesonets, etc.

Sample Master List (DC3 Data Archive)

DATA BY CATEGORY

- Accompanying Archives
- Aircraft
- Ancillary
- Hydrology
- Land Based
- Lightning
- Model
- Photography
- Radar
- Satellite
- Upper Air

DATA BY SITE

- Alabama Region
- Colorado Region
- Oklahoma Region

Back to DC3

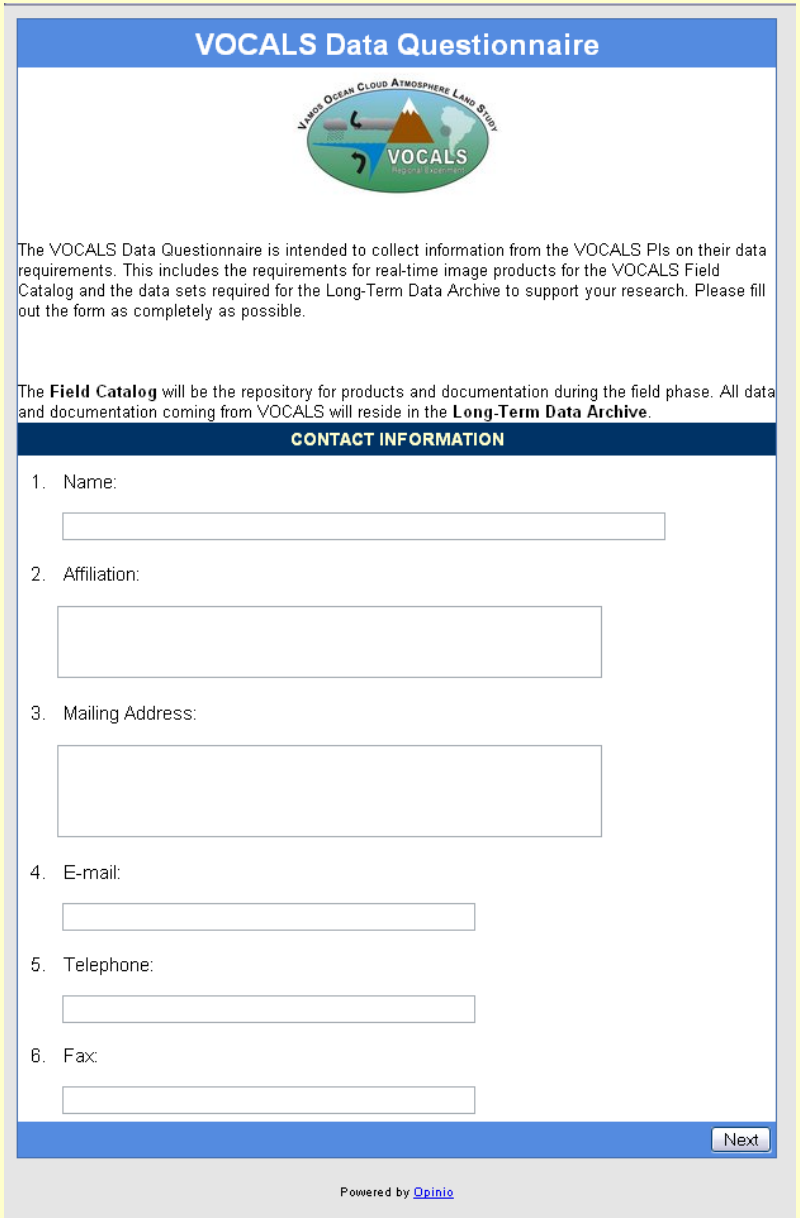
Email comments & questions

DC3 Data Sets

Data Set Name (Responsible Group/PIs shown in parentheses)	Date Posted	Info
Accompanying Archives		
NASA Langley DC3 Merged Aircraft Dataset Archive [Chen, Gao (NASA-LaRC)]	2012-08-02	README
Aircraft		
Aircraft Meteorological Data Reports (AMDAR) and Aircraft Communications Addressing and Reporting System (ACARS) Data [(ESRL-GSD)]	2012-07-24	README
Aviation Weather Center Convective, Icing, and Turbulence SIGMET Imagery [(NCAR-EOL)]	New 2013-01-07	
Aviation Weather Center Pilot Reports of Icing and Turbulence (PIREPs) Imagery [(NCAR-EOL)]	New 2013-01-07	
DC3 Field Catalog Earth Tool (Replay) [(NCAR-EOL)]	New 2013-01-07	
NASA Langley DC3 Merged Aircraft Dataset Archive [Chen, Gao (NASA-LaRC)]	2012-08-02	README
NOAA NWS Aviation Weather Center Aviation Digital Data Service (ADDS) [(NOAA-NWS-ADDS)]	New 2013-01-17	README
Aircraft: DLR Falcon		
DC3 Mission Summaries [(NCAR-EOL)]	2012-10-23	

http://data.eol.ucar.edu/master_list/?project=DC3

http://survey.ucar.edu/opinio/s?s=3634



INFORMATION COLLECTED ON:

- Imagery and products needed for the field catalog (real-time ingest)
- Supporting Datasets needed for research
- PI Data to be submitted to the field catalog/archive
- Product transfer to aircraft
- Special products/reports/datasets needed

DATA CATEGORIES

Aircraft	Upper Air
Satellite	Oceanographic
Land-based	Model Output
Radar/Lidar	Other

Composite Data Sets at NCAR/EOL

A composite dataset is a collection (over some time period and region) of similar data (e.g. surface meteorological) from a variety of sources, put into a common format, and passed through a uniform quality control.

Why does NCAR/EOL develop composites?

- **Provides data in a uniform format with QC.**
- **Allows determination of network/site problems.**
- **Useful for model applications.**
- **Minimizes duplication of effort.**

Hourly Surface Meteorological Data Composite (2991 stations)

1-min sites (* 385)
AWOS (+ 335)
RAWS (* 220)
MesoWest (+ 94)
HPCN (o 138)
RWIS (+ 279)
GPSMET (o 153)
CO CoAgMet (* 17)
FL FAWN (+ 5)
IA IEM (+ 88)
IL ICN (o 19)
IN PAAWS (* 7)
KS GWMD5 (* 10)
MI MAWN (o 33)
MO CAWS (* 21)
OH OARDC (o 11)
OK ARS Micro (o 42)
OK Mesonet (+ 119)
TX LCRA (o 102)
TX TNRCC (+ 47)
West TX Meso (o 39)
Texas ET (o 23)
15 Other Networks (o 804)